

CLAIMS

1. An ocular lens material comprising at least one kind of a compound (A) having an ethylenically unsaturated group and 5 polydimethylsiloxane structure through a urethane bond and at least one kind of a pyrrolidone derivative (B) in which a polymerizable group is a methylene group.

2. An ocular lens material according to Claim 1, comprising 10 5 to 60 % by weight of the pyrrolidone derivatives in which the polymerizable group is a methylene group.

3. An ocular lens material according to Claim 1 or 2, wherein the pyrrolidone derivatives in which the polymerizable group is 15 a methylene group is 1-alkyl-3-methylene-2-pyrrolidone.

4. An ocular lens material according to Claim 3, wherein the 1-alkyl-3-methylene-2-pyrrolidone (B) is 1-methyl-3-methylene-2-pyrrolidone.

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5. An ocular lens material according to Claim 1 or 2, wherein at least one of the pyrrolidone derivatives in which the polymerizable group is a methylene group is 1-alkyl-5-methylene-2-pyrrolidone.

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6. An ocular lens material according to Claim 5, wherein the 1-alkyl-5-methylene-2-pyrrolidone (B) is 1-methyl-5-methylene-2-

pyrrolidone.

7. An ocular lens material according to Claim 1 or 2, wherein at least one of the pyrrolidone derivatives in which the
5 polymerizable group is a methylene group is 5-alkyl-3-methylene-2-pyrrolidone.

8. An ocular lens material according to Claim 7, wherein the
5-alkyl-3-methylene-2-pyrrolidone (B) is 5-methyl-3-methylene-2-
10 pyrrolidone.

9. An ocular lens material according to Claim 1, wherein the repeating number of siloxane of the polydimethylsiloxane structure in a compound (A) having ethylenically unsaturated groups and
15 polydimethylsiloxane structure through a urethane bond is 10 to 100.

10. An ocular lens material according to Claim 1, 2, 3, 4, 5, 6, 7, 8 or 9, wherein tensile modulus is 0.2 to 0.8 MPa and stress relaxation under loading a fixed load for 30 seconds is 8 to 15 %.

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11. An ocular lens material according to Claim 1, 2, 3, 4, 5, 6, 7, 8 or 9, wherein water content is 10 to 60 % by weight.

12. An ocular lens material according to Claim 1, 2, 3, 4, 5,
25 6, 7, 8 or 9, wherein water content is 32 to 55 % by weight.

13. An ocular lens material according to Claim 1, wherein

(C) a silicone compound other than the compound (A) having ethylenically unsaturated groups and polydimethylsiloxane structure through a urethane bond is contained.

5 14. An ocular lens material according to Claim 13, wherein
the silicone compound (C) is tris(trimethylsiloxy)silylpropyl
(meth)acrylate.

10 15. An ocular lens material according to Claim 1 or 13,
wherein a N-substituted acrylamide (D) is furthercomprised.

15 16. An ocular lens material according to Claim 15, wherein
the N-substituted acrylamide (D) is at least one of N-substituted
acrylamides selected from the group consisting of N,N-dimethyl
acrylamide, N,N-diethyl acrylamide, acryloyl morpholine, N-isopropyl
acrylamide and N-(2-hydroxyethyl) acrylamide.

20 17. An ocular lens material according to Claim 1, 13 or 15,
wherein at least one of a crosslinking agent is further comprised.

18. A lens for the eyes comprising the ocular lens material
according to 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 or 17.

25 19. A method for preparing an ocular lens material,
comprising

a) a step of obtaining a mixed solution comprising at least one
kind of a compound (A) having ethylenically unsaturated groups and

polydimethylsiloxane structures through a urethane bond and a hydrophilic monomer (B) comprising at least one kind of a pyrrolidone derivative in which a polymerizable group is a methylene group and an photo polymerization initiator and/or a thermal polymerization initiator,

- 5 b) a step of introducing said mixed solution to a mold ,
 c) a step of obtaining an ocular lens material cured by
irradiating UV light on and/or heating the mixed solution in said mold,
 d) a step of carrying out surface treatment to said ocular lens
material after demolding said ocular lens material to impart
10 hydrophilicity and deposit resistance,
 e) a step of removing an unreacted component from said
ocular lens material, and
 f) a step of hydrating said ocular lens material.

15 20. A method for preparing the ocular lens material
according to Claim 19, comprising at least one of the compounds (A)
having ethylenically unsaturated groups and polydimethylsiloxane
structures through a urethane bond, at least one of the pyrrolidone
derivatives (B) in which the polymerizable group is a methylene group,
20 the silicone compound (C) and the N-substituted acrylamide (D) in the
mixed solution.

21. A method for preparing the ocular lens material
according to Claim 19 or 20, containing a crosslinking agent in the
25 mixed solution.

22. A method for preparing the ocular lens material

according to Claim 19, 20 or 21, containing at least one of polymerizable or non polymerizable ultraviolet absorbents and/or at least one of polymerizable or non polymerizable dyes in the mixed solution.

5 23. A method for preparing the ocular lens material according to Claim 19, 20, 21 or 22, comprising 0.1 to 5 % by weight of a water-soluble organic solvent.

10 24. A method for preparing the ocular lens material according to Claim 23, wherein the water-soluble organic solvent is a water-soluble organic solvent selected from alcohols having 1 to 4 carbons, acetone, methyl ethyl ketone, dimethylformamide, dimethylsulfoxide, acetonitrile and N-methyl-2-pyrrolidone.

15 25. A method for preparing the ocular lens material according to Claim 19, wherein the surface treatment is plasma treatment.

20 26. A method for preparing the ocular lens material according to Claim 25, wherein oxygen or a mixture of oxygen is used in the plasma treatment.

25 27. A method for preparing the ocular lens material according to Claim 26, wherein a mixture of oxygen and water is used in the plasma treatment.

28. A method for preparing the ocular lens material

according to Claim 26, wherein a mixture of oxygen and tetrafluoromethane is used in the plasma treatment.

29. A method for preparing the ocular lens material
5 according to Claim 26, wherein a mixture of oxygen and organic silane is used in the plasma treatment.

30. A method for preparing the ocular lens material according to Claim 29, wherein the organic silane is tetramethoxysilane.

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31. A method for preparing the ocular lens material according to Claim 26, wherein a mixture of oxygen and methane is used in the plasma treatment.

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32. A method for preparing the ocular lens material according to Claim 26, wherein a mixture of oxygen, nitrogen and methane is used in the plasma treatment.

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33. A method for preparing the ocular lens material according to Claim 19, wherein the surface treatment is a treatment according to the coating method of a hydrophilic polymer coating.

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34. A method for preparing the ocular lens material according to Claim 33, wherein the coating method is a plasma polymerization method of a hydrophilic monomer.

35. A method for preparing the ocular lens material

according to Claim 33, wherein the coating method is a plasma-induced graft polymerization.

36. A method for preparing the ocular lens material
5 according to Claim 19, further comprising (g) a step of coloring the
ocular lens material by using a vat dye.